SWD.a1

What is Claimed is:

1. An interface between a joystick device and a processor, comprising:

a buffer circuit, in a first operation mode of said interface, receiving an analog joystick position measurement signal from said joystick device, outputting a first logic state as a digital signal before said analog joystick measurement signal exceeds said predetermined threshold, and outputting a second logic state as said digital signal after said analog joystick measurement signal exceeds said predetermined threshold; and

a pulse generator generating a pulse based on said digital signal in said first operation mode of said interface, a width of said pulse representing a coordinate position of said joystick device.

2. The interface of claim 1, wherein said pulse generator enters a disabled state in response to a control signal from said processor, and said pulse generator does not generate said pulse in said disabled state and does not dissipate power in said disabled state.

3. The interface of claim 1, wherein said buffer circuit is connected to a charge storage device, and places said charge storage device in a discharged state in a second operation mode of said interface.

4. The interface of claim 3, wherein said buffer circuit permits said charge storage device to begin charging in said first operation mode of said interface.

5. The interface of claim 3, wherein said pulse generator enters a disabled state in response to a control signal from said processor in said second operation mode of said interface, and said pulse generator does not generate said pulse in said disabled state.

6. The interface of claim 1, wherein said pulse generator is a latch.

7. The interface of claim 6, wherein said latch is cleared at a beginning of said first operation mode of said interface by a control signal from said processor, and said latch stores a logic "1" when said digital signal is said second logic state.

8. The interface of claim 1, further comprising:
a Resistor-Capacitor (RC) network, connected to said joystick device, generating said analog joystick position measurement signal, said RC network capacitor being preselected in accordance with the formula:

$$Cnew = \frac{11nF}{\ln(\frac{5V}{5V - Vtnew})} \quad for\ Vtnew < 5.0\ Volts,$$

where Cnew represents the capacitance of the RC network capacitor, and Vtnew represents said predetermined threshold.

9. A processor based system, comprising:
a processor:

a joystick device;

an interface interfacing said joystick device with said processor, said interface including,

a buffer circuit, in a first operation mode of said interface, receiving an analog joystick position measurement signal from said joystick device, outputting a first logic state as a digital signal before said analog joystick measurement signal exceeds said predetermined threshold, and outputting a second logic state as said digital signal after said analog joystick measurement signal exceeds said predetermined threshold, and

a pulse generator generating a pulse based on said digital signal in said first operation mode of said interface, a width of said pulse representing a coordinate position of said joystick device, and outputting said pulse to said processor.

10. The processor based system of claim 9, wherein said pulse generator enters a disabled state in response to a control signal from said processor, and said pulse generator does not generate said pulse in said disabled state and does not dissipate power in said disabled state.

11. The processor based system of claim 9, wherein said buffer circuit is connected to a charge storage device, places said charge storage device in a discharged state in a second operation mode of said interface, and permits said charge storage device to begin charging in said first operation mode of said interface.

12. The processor based system of claim 9, wherein said pulse generator is a latch, said latch is cleared at a beginning of said first operation mode of said interface by a control signal from said processor,

said interface by a control signal from said processor, and said latch stores a logic "1" when said digital signal is said second logic state.

13. The interface of claim 9, further comprising:

a Resistor-Capacitor (RCA) network, connected to said joystick device, generating said analog joystick position measurement signal, said RC network capacitor being preselected in accordance with the formula:

$$Cnew = \frac{11nF}{\ln(\frac{5V}{5V - Vtnew})} \text{ for } Vtnew < 5.0 \text{ Volts},$$

where Cnew represents the capacitance of the RC network capacitor, and Vtnew represents said predetermined threshold.

14. A method of interfacing a joystick device with a processor, comprising:

(a) receiving an analog joystick measurement signal from said joystick device;

(b) generating a digital signal, the logic level of said first digital signal being set based on whether said analog joystick measurement signal exceeds a predetermined threshold level,

(c) outputting said digital signal to a pulse generator;

(d) generating a pulse based on the logic level of said first digital signal, a width of said pulse representing a coordinate position of said joystick device; and

(e) outputting said pulse to said processor.

15. The method according to claim 14, wherein said steps (a) - (e) are performed in a first mode of operation.

16. The method of claim 15, wherein said step (a) receives said analog joystick measurement signal via a charge storage device; and further including,

(f) placing said charge storage device in a discharged state in a second mode of operation.

17. The method of claim 16, further comprising:

(g) permitting said charge storage device to begin charging in said first mode of operation.

18. The method of claim 16, further comprising:

(g) prohibiting said steps (d) and (e) in response to a control signal from said processor in said second mode of operation.

19. The method of claim 14, further comprising:

(f) prohibiting said steps (d) and (e) in response to a control signal from said processor.

20. The method of claim 14, wherein said analog joystick measurement signal is generated by a Resistor-Capacitor (RC) network capacitor connected to said joystick device, and said method further comprises:

(f) preselecting the RC network capacitor in accordance with the formula:

$$Cnew = \frac{1\,\mu F}{\ln\left(\frac{5V}{5V - Vtnew}\right)} \quad for\ Vtnew < 5.0\ Volts,$$

where Cnew represents the capacitance of the RC network capacitor, and Vtnew represents said predetermined threshold level.